

a3 approximately 50,000 molecules of oligonucleotide per embryo were injected using the standard transgenic protocol as described in U.S. Patent No. 4,873,191.

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### REMARKS

**I. Drawings.** Figure 4 is amended to correct typographical errors in the DRAP protein sequence given in Figure 4B. The DRAP sequence presented in Figure 4B has been amended as follows: (1) amino acids 92-93 have been changed from "IP" to "PI" amino acid; and (2) amino acid 155 is changed from "G" to "Q". The amendment is supported by the DRAP protein sequence given in Figure 2 of the application as filed. Accordingly, no new matter is added to the application by these change.

**II. Specification.** The specification has been amended to include reference to provisional application 60/144,736, filed July 21, 1999, as required under 37 C.F.R. § 1.78(a)(5). Applicants claim the benefit of priority of the provisional application under 35 U.S.C. 119(e).

The "Brief Description of the Drawings" has been amended to make reference to the sequences that are found in Figure 4D.

Example 8 in the specification has been amended to correct an inadvertent error. Example 8 has been amended to state, correctly, that DRAP and c-kit 5'P-containing oligonucleotide were injected into male pronuclei of fertilized mouse eggs. Support for the amendment is found in the specification at page 26, line 30 through page 27, line 1. Further support is found at page 42, lines 2-3, where the specification sets forth that embryos were injected as described in U.S. Patent No. 4,873,191. Support for injection into the zygote male pronucleus is found in the '191 patent at col. 9, lines 4-8. A copy of the '191 patent is enclosed

for the Examiner's convenience. All cited patents have been incorporated into the specification in their entirety (see specification at page 8, lines 2-4).

All amendments being supported by the application as filed, no new matter has been added to the application by this Preliminary Amendment.

Applicants respectfully request a prompt and favorable action on the merits of the application.

Respectfully submitted,



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PATENT TRADEMARK OFFICE

Docket No: 2567/1F496-US2

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: Andrew EISEN

Serial No.: T.B.A.  
National Phase Application of  
PCT/US00/19901

Art Unit: T.B.A.

Filed: Concurrently herewith

Examiner: T.B.A.

For: **DROSOPHILA RECOMBINATION-ASSOCIATED PROTEIN AND METHODS FOR USE**

**MARK-UP TO AMENDMENT**

**IN THE SPECIFICATION**

In the "Brief Description of the Drawings", at page 6, lines 6-8, the description of Figure 4D has been amended as follows:

Figure 4D depicts a new motif MIVVKDESSP [SEQ ID NO: 15] shared between DRAP and other recombination-related proteins as identified through cross reactivity with anti-DRAP antibodies and sequence comparison. Depicted are motif sequences from mouse and human RAD 51, LLIVDS [SEQ ID NO: 23]; yeast RAD 51 and DCM 1, LIVVDS [SEQ ID NO: 24; E. coli

REC A, VIVVDS [SEQ ID NO: 25]; FLP recombinase, MIALKDETNP [SEQ ID NO: 26]; T4 Gene 32 protein, ILVVKDPAAP [SEQ ID NO: 27], MIAVDVEMGE [SEQ ID NO: 28] and KGFSSE [SEQ ID NO: 29]; and human topoisomerase I, IKDEP [SEQ ID NO: 30], KDGSSE [SEQ ID NO: 31] and GFSSP [SEQ ID NO: 32].

In the description of Example 8 which begins on page 41, the first paragraph immediately following the section heading "*Injection of DRAP and c-kit Oligos*", which bridges pages 41-42, has been amended as follows:

DRAP was coinjected into male pronuclei of fertilized mouse eggs ~~embryonic stem cells~~ with c-kit 5'P-containing oligonucleotide, [SEQ ID NO:9] at a concentration of 10:1 molar ratio of DRAP to oligonucleotide. In this experiment approximately 500,000 molecules of DRAP and approximately 50,000 molecules of oligonucleotide per embryo were injected using the standard transgenic protocol as described in U.S. Patent No. 4,873,191.